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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,207	01/04/2002	Martin L. Plumer	S01.12-0846/STL 10285	2028

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EXAMINER	
EVANS, JEFFERSON A	

ART UNIT	PAPER NUMBER
2652	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/039,207	PLUMER ET AL.	
	Examiner	Art Unit	
	Jefferson A. Evans	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,9-12,14-19 and 21-23* is/are pending in the application.

4a) Of the above claim(s) *3,6,9,12,14-16,19 and 21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4, 5, 7, 10, 11, 17, 18, 22, and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1, 3-7, 9-12, 14-19, and 21-23 are pending.

Claims 3, 6, 9, 12, 14-16, 19, and 21 are withdrawn from further consideration.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 5, 7, 10, 11, 17, 18, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (U.S. 6,128,166) in view of Cohen et al (U.S. 5,703,740) and/or Chang et al (U.S. 6,542,331). Note figure 7. Tanaka discloses a single write pole 26 separated from a write coil 27 by an insulating material, and a MR element 24 between shield layers 23.

Tanaka does not disclose a helical coil arrangement.

Cohen and Chang each disclose helical coil arrangements.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the coil of Tanaka et al take on a helical arrangement. The motivation would have been: such a coil arrangement was an effective manner in which to provide an increased number of turns and to increase efficiency. Chang states (column 3 – line 67 to column 4 – line 6) that a helical coil arrangement can serve to improve magnetic flux creation efficiency and that the methods for fabricating helical shaped coils were known in the art.

3. Response to arguments filed 11-12-2004

A... On page 2 and the top of page 3, applicant contends that Tanaka does not expressly disclose a lack of a return path and that structure in Tanaka, such as one of the read element shields, would likely act as a return path. Applicant contends that figure 7 relied on by the Examiner is a highly simplified illustration related more to depicting certain relationships rather than specific comprehensive structural details.

In response, the Examiner first notes that the claim language refers to "a return pole element" rather than the "a return path" (the phrase in the claim is considered a bit more limiting). Tanaka discloses the use of a single write pole and includes no disclosure in the specification or depiction in the figures that indicates any element of Tanaka would function as a return pole element, and even if some small amount of flux generated by the write pole were to pass through a shield of Tanaka's write element, it would be below a threshold where it could be considered to act as a "return pole element". Applicant's arguments that the Examiner should assume a return pole is present even though one is not pictured are not persuasive. Figure 7 depicts relationships but also depicts structural features in a manner and in a degree of comprehensiveness comparable to other prior art references in the art. Tanaka does not include statements concerning figure 7 expressly stating that figure 7 is missing structural elements, nor are there inferences adequate to establish such a fact. As a result, the Examiner's position is that figure 7 shows what it shows.

B... On pages 3 to 5 applicant contends that there is insufficient motivation to combine Cohen and/or Chang with Tanaka such that Tanaka would be provided with a

helical coil arrangement, and that Cohen and Chang's teaching of increased efficiency via a helical coil arrangement is insufficient to provide the necessary motivation.

The Examiner's position remains that it would be obvious to apply a helical coil as taught by Cohen to Tanaka at the invention was made. Tanaka discloses a single write pole versus a pair of poles thus removing the ability to have turns go around a back area connecting the poles. Tanaka appears to provide a short side extension for the write coil to surround but one of ordinary skill would recognize that the number of turns and efficiency would still be limited and that a helical coil arrangement would be a effective means for overcome this limitation.

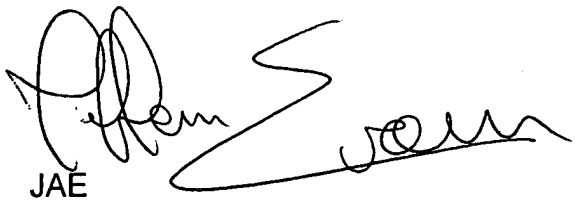
4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferson A. Evans whose telephone number is 571-272-7574. The examiner can normally be reached on Monday to Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JAE
May 27, 2005

Jefferson A. Evans
Primary Examiner
Art Unit 2652

JEFFERSON EVANS
PRIMARY EXAMINER